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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,289	08/27/2003	Allan J. Wildey	900260.90200	5484

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EXAMINER	
MANCHO, RONNIE M	
ART UNIT	PAPER NUMBER
3663	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/649,289	WILDEY ET AL.	
	Examiner	Art Unit	
	Ronnie Mancho	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 2-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 2-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

NEW GROUND(S) OF REJECTION

1. In view of the brief filed on 10/27/06, PROSECUTION IS HEREBY REOPENED as set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

JACK KEITH
SUPERVISORY PATENT EXAMINER

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 2 and 4, etc, It is not clear what all is mean and encompassed by "a sensitivity selector". The phrase is indefinite. In applicant's specification, sections 30 and 31, the applicant recites, "a sensitivity selection switch" and "the steering sensitivity selection switch allows the operator to manually select between coarse mode, fine mode, or automatic mode" respectively. These limitations are indefinite, as they do not clearly teach one skilled in the art the meaning of the terms. One skilled in the art will not understand the meets and bounds of "coarse mode, fine mode, or automatic mode" in relation to sensitivity. One skill in the art will further raise questions such as "coarse mode, fine mode, or automatic mode" of what? Does the applicant imply coarse or fine mode of a road, of tires, etc?

In claim 13, 14, 19, etc, the applicant recites "maximum". It is not clear what all is meant and encompassed by "maximum". The term is indefinite.

In claim 20, it is not clear what all is meant and encompassed by "is the same for different types of steering". The phrase is indefinite since applicant did not disclose the different types of steering referred to. Does applicant mean a steering in a front loader, skid steer loader, trailer, tractor, vehicles, etc?

It is further not clear what all is meant and encompassed by "priority of flow". The phrase is indefinite.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zulu (6039133) in view of Nystuen et al (4771851)

Regarding claim 2, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second frame (14, fig. 1) pivotally connected to the first frame 12 by a pivot joint (13, fig. 1);

c) at least one hydraulic cylinder (15, 16 fig. 1), connected between the first frame 12 and the second frame 14 and spanning the pivot joint 13, to articulate the first frame 12 and the second frame 14 relative to one another;

d) a proportional solenoid actuated hydraulic valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-56; col. 4, lines 34-67);

f) a processor (col. 3, lines 39-44) communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; and

g) a sensitivity selector 79 (col. 5, lines 34-67; col. 6, lines 25-35) communicatively connected to the processor to provide an input signal to the processor that causes the processor to vary the signal output to the valve in accordance with the input signal from the sensitivity selector.

On the other hand, Zulu did not particularly disclose a sensitivity selector, wherein the setting of said sensitivity selector is determined directly by an operator.

However, Nystuen et al (figs. 1, 10, col. 7, lines 55-62) disclose a steering system for a work vehicle including a sensitivity selector communicatively connected to a processor to provide an input signal to the processor that causes the processor to vary the signal output to a valve in accordance with the input signal from the sensitivity selector, wherein a setting of said sensitivity selector is determined directly by an operator.

Therefore, it would have been obvious to one of ordinary skill in the art of work machines to modify the Zulu device as taught by Nystuen et for the purpose solely steering soly in an articulation mode as desired by an operator. It further would have been obvious to modify Zulu for the of varying steering modes of operation in different working conditions (seeNystuen col. 9, lines 13-55; col. 4, lines 19-54).

6. Claims 2-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zulu (6039133) in view of Brandt et al (6863144)

Regarding claim 2, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second frame (14, fig. 1) pivotally connected to the first frame 12 by a pivot joint (13, fig. 1);

c) at least one hydraulic cylinder (15, 16 fig. 1), connected between the first frame 12 and the second frame 14 and spanning the pivot joint 13, to articulate the first frame 12 and the second frame 14 relative to one another;

d) a proportional solenoid actuated hydraulic valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-56; col. 4, lines 34-67);

f) a processor (col. 3, lines 39-44) communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; and

g) a sensitivity selector 79 (col. 5, lines 34-67; col. 6, lines 25-35) communicatively connected to the processor to provide an input signal to the processor that causes the processor to vary the signal output to the valve in accordance with the input signal from the sensitivity selector.

On the other hand, Zulu did not particularly disclose a sensitivity selector, wherein the setting of said sensitivity selector is determined directly by an operator.

However, Brandt et al (figs. 2-4, 9-14; col. 4, lines 58-67; col. 5, lines 38-67; col. 2, lines 5-10) disclose a steering system for a work vehicle including a sensitivity selector communicatively connected to a processor to provide an input signal to the processor that causes the processor to vary the signal output to a valve in accordance with the input signal from the sensitivity selector, wherein a setting of said sensitivity selector is determined directly by an operator.

Therefore, it would have been obvious to one of ordinary skill in the art of work machines to modify the Zulu device as taught by Brandt et for the purpose of varying steering modes of operation in different working conditions.

Regarding claim 3, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the operator may set the sensitivity selector to either of at least two different settings, one of which causes the processor to produces more steering response for a given input from the steering input device than the other.

Regarding claim 4, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second frame (14, fig. 1) pivotally connected to the first frame 12 by a pivot joint (13, fig. 1);

c) at least one hydraulic cylinder (15, 16 fig. 1), connected between the first frame 12 and the second frame 14 and spanning the pivot joint 13, to articulate the first frame 12 and the second frame 14 relative to one another;

d) a proportional solenoid actuated hydraulic valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-56; col. 4, lines 34-67);

f) a processor (col. 3, lines 39-44) communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; and

g) a sensitivity selector 79 (col. 5, lines 34-67; col. 6, lines 25-35) communicatively connected to the processor to provide an input signal to the processor that causes the processor to

vary the signal output to the valve in accordance with the input signal from the sensitivity selector.

On the other hand, Zulu did not particularly disclose a sensitivity selector, wherein the setting of said sensitivity selector is determined by what gear the vehicle is in.

However, Brandt et al (figs. 2-4, 9-14; col. 4, lines 58-67; col. 5, lines 38-67; col. 2, lines 5-10) disclose a steering system for a work vehicle including a sensitivity selector communicatively connected to a processor to provide an input signal to the processor that causes the processor to vary the signal output to a valve in accordance with the input signal from the sensitivity selector, wherein a setting of said sensitivity selector is determined by what gear the vehicle is in.

Therefore, it would have been obvious to one of ordinary skill in the art of work machines to modify the Zulu device as taught by Brandt et for the purpose of varying steering modes of operation in different working conditions.

Regarding claim 5, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the setting of the sensitivity selector determines the rate at which articulation takes place in response to a given operator input to the steering input device.

Regarding claim 6, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the setting of the sensitivity selector determines the magnitude of articulation that takes place in response to a given operator input to the steering input device.

Regarding claim 7, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the setting of the sensitivity selector determines the rate of change of articulation and the magnitude of articulation that takes place in response to a given operator input to the steering input device.

Regarding claim 8, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the steering input device is an electronic joystick.

Regarding claim 9, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the steering input device is an electronic steering wheel.

Regarding claim 10, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, further comprising a positional feedback sensor, communicatively connected to the processor, for measuring an articulation angle between the first frame and the second frame and communicating the articulation angle to the microprocessor.

Regarding claim 11, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 10, wherein the processor controls the valve to articulate the first frame and the second frame into an aligned position when the steering input device is placed in a center position.

Regarding claim 12, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, further comprising an operator input device communicatively connected to the processor for allowing an operator to input a tire size.

Regarding claim 13, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 12, wherein the processor determines a maximum articulation angle between the first frame and the second frame based on the tire size input by the operator.

Regarding claim 14, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 13, wherein the processor controls the valve to prevent articulation of the first frame and the second frame past the maximum articulation angle.

Regarding claim 15, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 14, wherein the processor controls the valve to slow down articulation as the maximum articulation angle is approached.

Regarding claim 16, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the processor controls the rate of displacement of the valve.

Regarding claim 17, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 16, wherein the processor controls the valve so as to gradually start and stop articulation.

Regarding claim 18, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second (14, fig. 1) frame pivotally connected to the first frame12 by a pivot joint 13;

c) at least one hydraulic cylinder (15, 16, fig. 1), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-67);

f) a processor 48 (col. 5, lines 47-67) communicatively connected to the proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) and to the steering input device 56 to control the valve in response to inputs from the steering input device;

g) wherein the processor 48 controls the valve to align axes of the first frame 12 and the second frame 14 to be generally parallel from a generally non-parallel position when the steering input device is returned to a center position.

Regarding claim 19, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12;

b) a second frame 14 pivotally connected to the first frame by a pivot joint;

c) at least one hydraulic cylinder (15, 16), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering 56 input device; f) an input device for an operator to input tire size;

g) a processor 48 communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; h) wherein the processor controls the valve so as not to exceed a maximum articulation angle between the first and second frames which the processor sets based on the tire size input by the operator (columns 5-8).

Regarding claim 20, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12;

b) a second 14 frame pivotally connected to the first frame by a pivot joint 13;

c) at least one hydraulic cylinder (15, 15), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56;

f) a processor48 ;

g) an interface 57 (fig. 2; col. 5, lines 17-20) operatively connecting the steering input device to the processor 48;

h) wherein the processor 48 operates the proportional solenoid valve in response to inputs from the steering input device (col. 5, lines 47-67);

i) wherein 57 the interface is the same for different types of steering input devices.

Regarding claim 21, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12;

b) a second frame 14 pivotally connected to the first frame 12 by a pivot joint 13;

c) at least one hydraulic cylinder (15, 16), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid steering valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders to control the flow of hydraulic fluid to the hydraulic cylinder;

e) at least one other solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) to control at least one other function;

f) a source of pressurized hydraulic fluid which supplies hydraulic fluid under pressure to both of said valves (columns. 5&6);

g) an operator controlled steering input device 56; and

h) a processor 48 communicatively connected to the steering valve and to the steering input device to control the steering valve in response to inputs from the steering input device, and communicatively connected to the other solenoid valve to control it (col. 5&6);

i) wherein the processor 48 gives priority of flow from the source of hydraulic fluid to the steering valve (col. 5&6).

Regarding claim 22, Zulu (abstract, figs. 1&2) discloses the steering system of claim 2, wherein the valve is a four-way, three-position hydraulic valve.

MPEP 2114.

7. The statement of intended use or field of use, "to control in response to", "to vary the signal ....in response to", "align axes of .....when ....is returned to", etc clauses are essentially method limitation or statement of intended or desired use. Thus, the claim as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647. See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in.a claim to the material or article worked upon does not serve to limit an apparatus claim.

The prior art anticipate the structural limitations in the apparatus claims. Even if the prior art did not perform the method limitations recited in the apparatus claims, which the examiner is not conceding, it is believed that the structural arrangement in the prior art is capable of performing the method limitation recited in the apparatus claims.

Response to Arguments

8. Applicant's arguments with respect to claim 10/27/05 have been considered but are moot in view of the new ground(s) of rejection.

9. Applicant argues that the 103 combination is improper because the prior art Zulu discloses an articulated vehicle and the prior art Brandt disclose a skid steer loader, wherein the skid steer loader has wheels which are independently steerable, but on the other hand, the wheels of an articulated vehicle are not. The examiner disagrees. The wheels of the Brandt are shown to be steerable in pairs (figs 3) NOT singly as urged by the applicant. It is further noted that applicant did not claim that the wheels in the invention are NOT singly steerable.

10. The applicant further argues that tire size is not inputted in the prior art. The examiner disagrees. The prior art takes into consideration the tire size when choosing steering mode and kind of work the vehicle will perform.

The applicant further argues that the prior art does determine the gear that the vehicle is in. the examiner disagrees. The prior art disclose joy sticks to put the vehicle in forward, reverse directions, and different speed modes.

The applicant further argues that the prior art does not disclose aligning the axes of two frames to be generally parallel. The examiner disagrees. In the prior art, it is disclosed that one

of the steering modes is such that the wheel are locked so that the vehicle moves straight ahead. Further the as shown in fig. 1 of Zulu, the frames a parallel.

The applicant further argues about maximum articulation. As pointed out above, the term is indefinite. However, the prior art teach about angles by which to turn the steering.

Applicant further argues of steering type. As pointed out above, the phrase is indefinite. The applicant has also admitted that the prior art disclose a joy. As noted, the joy stick is a steering type.

The applicant argues about priority of flow. As noted above, the term is indefinite. The prior art teaches when to allow flow and when not to allow or reduce flow of hydraulic fluid to the various valves.

It is believed that the rejections are proper and stand.

Communication

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 571-272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ronnie Mancho
Examiner
Art Unit 3663

January 20, 2007

JACK KEITH
SUPERVISORY PATENT EXAMINER